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Fuglsang, Emil Dietz; Pedersen, Morten Lauge

Publication date:
2011

Document Version
Publisher's PDF, also known as Version of record

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Emil Dietz Fuglsang - *Morten Lauge Pedersen*

Water and Environment, Aalborg University, Sohngaardsholmsvej 57, DK-9000 Aalborg, DK

To improve drainage of agricultural areas channelization of streams has been carried out during the past centuries. As a result of the channelization of many Danish streams, the streams are left void of natural stones and gravel and an excessive sediment transport has been started.

Many projects have been carried out focusing on reintroducing gravel in small and large streams. The positive effects of reintroducing spawning gravel has some places been minimized due to the amount of fine sediments present in regulated streams. The negative consequences of high levels of infiltrated fines have been shown in numerous studies. Infiltrated fines block the exchange of oxygen rich water to the eggs of salmonids and thus kill the eggs [1].

In order to control and lower the sediment transport in streams sediment traps are widely used. The traps are constructed upstream the gravel area by excavating a segment of the stream in order to make the stream wider and deeper and there by store the sediment. These traps are to be emptied at appropriate time intervals. Design of sediment traps has traditionally been carried out following some general guidelines [2].

In this study, the effect of a sediment trap on the fine sediment deposition rates in reintroduced gravel in a small stream is investigated.

Along with the measurement of total sediments the grain sizes of the fines are measured. The infiltration rate is measured using infiltration baskets. These baskets were made of metal net with a mesh size of 6mm. They had a height of 250mm and a diameter of 240mm. Initially the baskets were filled with cleaned gravel and buried at a depth so the top of the basket raised the level of the gravel around the basket.

At fixed intervals the buried baskets were carefully taken up and the infiltrated fines were separated from the gravel and quantified. The baskets were then reburied again. Along with the basket measurements the flow and temperature of the water were measured.

[1] Sear, D.A., Frostick, L.B., Rollinson, G. and Lisle, T.E. (2008): The Significance and Mechanics of Fine-Sediment Infiltration and Accumulation in Gravel Spawning Beds. American Fisheries Society Symposium 65: 149-173 (2008)

[2] Bedre vandløb – en praktisk håndbog, Vejle Amt og Sønderjyllands Amt, ISBN 87-7750-530-1(2000)